



DIRECTORS MEET - Center Directors and other NASA Officials met at Marshall Space Flight Center March 25-26 to discuss various topics concerning the Agency. The directors expect to congregate periodically at various locations for similar meetings. From left to right are Oran W. Nicks, Deputy Director Langley Research Center; Dr. George M. Low, Deputy Administrator NASA Headquarters; Robert L. Krieger, Director Wallops Flight Center; Dr. Rocco Petrone, NASA Associate Administrator; Dr. Hans M. Mark, Director Ames Research Center; Dr. William H. Pickering, Director Jet Propulsion Laboratory; Elmer S. Groo, NASA Associate Administrator for Center Operations (chairman); Miles Ross, Deputy Director Kennedy Space Center; Dr. William R. Lucas, Director Marshall Space Flight Center; Bruce T. Lundin, Director Lewis Research Center; Dr. Christopher C. Kraft, Director JSC; David R. Scott, Director Flight Research Center; and Dr. John F. Clark, Director Goddard Space Flight Center.

Throughout NASA

NACA

April marks the 60th anniversary of the founding of NASA's forefather institution, the National Advisory Committee for Aeronautics (NACA), an agency that had a profound influence on United States civil and military aviation programs and on the nation's early space experiments.

GEOS-3

An Earth-orbiting spacecraft designed to measure precisely the topography of the ocean surface and the sea state - wave height, period, and direction - recently was launched from the Western Test Range near Lompoc, Calif.

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ROUNDUP



NASA LYNDON B. JOHNSON SPACE CENTER

HOUSTON, TEXAS

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Skylab Spinoff For Space Shuttle

The conceptual design of an astronaut maneuvering unit for use in the Space Shuttle program is the subject of a \$373,000 study contract awarded by JSC to the Martin-Marietta Corporation in Denver, Colorado.

Martin has been asked to investigate the application of current and emerging technology and to develop several candidate conceptual designs of a manned maneuvering unit (MMU). After NASA selects the most promising concept, Martin will perform a detailed system design and fabricate a high fidelity mockup of the MMU and its support station. The ten month contract also calls for Martin to design and fabricate a set of prototype MMU hand controllers.

The utility of the "Buck Rogers" type MMU to the Space

Shuttle is a direct spinoff from the eight-month long Skylab Program concluded in February 1974. The highly successful experiment M509 Maneuvering Unit flown aboard Skylab, demonstrated the extreme precision and control with which an astronaut wearing a space suit and life support equipment can maneuver in zero-g and perform useful tasks. The M509 experiment also provided the preliminary design criteria for the Space Shuttle MMU.

The new MMU will provide the crewmen the capability to fly around outside the Shuttle spacecraft. Tasks such as inspection, maintenance, repair, retrieval, assembly, and photography can then be performed in support of the Space Shuttle and its payloads.

The MMU will be shaped like a horseshoe and will be designed to

fit around the EVA life support backpack. This approach allows the MMU to be readily donned for the EVAs where the crewmen must reach areas outside of the Shuttle payload bay.

Dr. Petrone To Leave NASA

Dr. Rocco Petrone is leaving as Associate Administrator of NASA to join the National Center for Resource Recovery as President and Chief Executive Officer next month.

As Associate Administrator, Petrone has been responsible for the overall planning and management of the agency's research and development program.

The National Center for Resource Recovery is a joint industry and labor endeavor to develop and encourage means to recover materials and energy from solid waste.

"I believe the recycling of our resources presents one of the great challenges of our times," Petrone said, "The energy crunch and the depletion of our resources point up very positively the need for man to

(Continued on page 3)

New MDP To Begin

JSC and the College of Business Administration of the University of Houston will jointly sponsor the fifth JSC Management Development Program (MDP) for both administrative and technical employees in August, 1975.

The four-semester program will include four 3-hour graduate courses in the general area of administration and management of Research and Development activities and frequent discussions with selected leaders from the academic and business communities.

(Continued on page 2)



FIRST HAND LOOK - Bernard Deloffre (right), recently appointed head of the European Space Research Organization's (ESRO) Spacelab Program receives a first hand account of moon rocks from Apollo 16 crew member Charles Duke. Deloffre stopped off at JSC as a part of a Space Shuttle familiarization tour and took time out for a tour of the Center's exhibit hall. While at JSC Deloffre received shuttle briefings from Robert F. Thompson, manager Space Shuttle Program Office and Aaron Cohen, manager Space Shuttle Orbiter.

ASTP Countdown

American and Soviet space crews last week began their final joint training session in the Soviet Union in preparation for the ASTP mission in Earth orbit next July.

Most of the training is taking place at the Gagarin Cosmonaut Center in Star City, near Moscow. On April 28, the crews are scheduled to inspect the Soyuz spacecraft in the Baykonur launch site near Tyuratam.

The training period will end May 2, completing the schedule of one familiarization period and two training sessions in each country. Training includes communications, joint mission activities planned in the Soyuz and contingency procedures involving Soyuz.

Joint mission simulations involving control centers, tracking stations and crews of both countries are scheduled in May and June; however, the prime crews' next face-to-face meeting after May 2 will be on July 17, when they exchange greetings in space after Apollo has docked with Soyuz.

Launch date for both spacecraft is July 15. Docking is scheduled on July 17, separation on July 19,

Soyuz landing on July 21 and Apollo landing on July 24. While the spacecraft are docked, the crews will exchange visits and conduct five joint experiments. The Apollo crew will be involved in 22 additional experiments after separating from Soyuz. The primary mission objective is to test compatible rendezvous and docking systems and techniques which were developed jointly by both nations.

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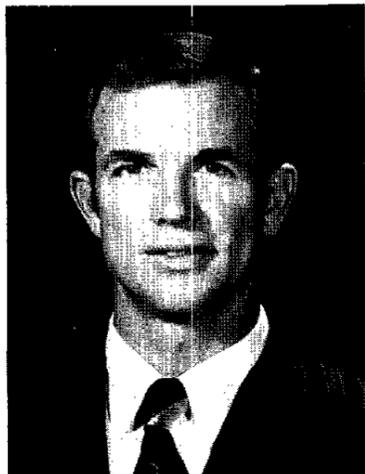
David Scott To Head FRC

Dr. David R. Scott has been appointed Director of NASA's Flight Research Center at Edwards, Calif. Dr. Scott has been serving as Acting Director of FRC since January 1975, when Lee R. Scherer left to become Director of Kennedy Space Center. Dr. Scott was named Deputy Director of FRC in August 1973. He is retired from the U.S. Air Force where he held the rank of Colonel.

As a former NASA astronaut, Dr. Scott flew on Gemini 8, Apollo 9, and was spacecraft commander of Apollo 15. After leaving the Astronaut corps in 1972, Dr. Scott was named Technical Assistant to the Apollo Program Manager at JSC.

On the Gemini 8 mission in 1966, Scott and Command Pilot Neil Armstrong performed the first successful docking of two vehicles in space. As command module pilot for Apollo 9 in 1969, Scott was instrumental in completing the first

comprehensive Earth-orbital qualification and verification test of a "full configured Apollo spacecraft." In 1971, Dr. Scott commanded Apollo 15, which was the fourth manned lunar landing mission, and was the first to visit and explore the Moon's Hadley Rille and Apennine Mountains.



David Scott

Films Continue

The next film in a series shown for the benefit of JSC employees on the first Tuesday of each month will begin at 12:15 p.m. May 6 in the Building 2 Auditorium.

Entitled "The Knowledge Bank" the film shows that research results are "deposits" to be accumulated and later drawn upon, with pay-off frequently beyond even the range of science fiction. The film takes a broad look at physics and astronomy research performed in the laboratory of space.

Secretary Gains 100% Support of Staff



OUTSTANDING SECRETARY — Marjorie B. Smith of the JSC/Earth Resources Laboratory (ERL), Bay St. Louis, Mississippi, receives the Outstanding Secretary Award for April from D. Wayne Mooneyhan, Director, ERL.

Marjorie B. Smith of the JSC/Earth Resources Laboratory (ERL) in Bay St. Louis, Mississippi, has been selected as April's Outstanding Secretary.

Marjorie joined the ERL staff in February 1974 and since that time has served as secretary to both the Land Applications Group and the Sea Applications Group. These groups include scientists who conduct separate remote sensing experiments involving support contractors, universities, and outside agencies.

"While the work of previous

secretaries had pleased only part of this diverse group of scientists, Mrs. Smith, in a matter of a few weeks, won the confidence and support of 100 percent of the staff of both groups," commented D. Wayne Mooneyhan, Director, ERL.

Mooneyhan says Marjorie's abilities have been especially valuable since he has been serving as Acting Chief of the Sea Applications Group in addition to carrying out his responsibilities as Laboratory Director. He says he has been able to perform in both capacities because of the effective way Marjorie

organizes his work into time-saving packages. Her method involves screening all incoming items to determine need for attention or action, and searching project files and questioning group members for pertinent background information on the items.

"Mrs. Smith's ability to learn and understand the individual characteristics of a diverse group such as ours, and her ability to organize work to maximize the effectiveness of her supervisor's time, makes her a remarkable secretary, worthy of the award she received," Mooneyhan said.

Lack of Communication Is Root of Many Problems

Mary Lopez is a "bright-eyed" native of Houston who has worked at JSC for 12 years. During the past year, she has added to her responsibilities as a division secretary for Bioengineering Systems by serving as an EEO Counselor.

Mary feels that her position as a division secretary has been an asset to her counseling experiences because she is in constant contact with people and is able to "sharpen" her communication skills. Effective communication, she says, is essential in any situation.

She added that lack of communication is the root of many problems between employees and supervisors.

"Sometimes a supervisor is extremely busy and doesn't spend enough time with employees, and in many instances, the employee isn't confident enough to approach the supervisor about problems on

the job. In order to even begin to solve the problem, it is necessary to alleviate these communication gaps. Often an employee has a valid complaint that is taken care of as soon as the supervisor is made aware of the problem," Mary commented.

She feels it is important to make the most of the hours spent at work, "We are here eight hours a day — that's a big part of our lives. We should try to make the best of it and relate well with co-workers," she said.

Apart from her job, Mary's apartment is a "jungle of plant life." Her favorite pastime is experimenting with gourmet cooking, particularly Mexican food. Some of her specialties are listed below:

"Red" Enchilada Sauce

Place chili powder, small amount of hot water, and one can of tomato



Mary Lopez

sauce in bowl. Add garlic powder, a tiny bit of sugar, cumin, and cloves, mix into a paste. In a saucepan, brown oil and flour (like gravy) and brown lightly, add the other ingredients and water. Cook until it thickens. If too thick, continue to add water. May be as mild or hot as you like.

"Green" Hot Sauce

½ to 1 lb. of fresh jalapeno peppers in a saucepan with ½ cup water and several garlic cloves. Cover and cook twenty minutes. Remove stems from jalapeno peppers and place peppers in a blender with one can of whole tomatoes (or tomato sauce). Salt to taste. Blend.

Safety Tips

There is a proper method of using jumper cables when starting a car with a dead battery. When these cables are used incorrectly, the battery could explode and cause serious eye injuries. Charging batteries releases hydrogen gas that will explode if a spark or flame is brought too near. The only safe way to jump a dead battery is:

— Connect one end of a cable to the positive pole of the discharged battery.

— Connect the second cable to the negative pole of the booster battery and the other end to the engine block of the vehicle with the discharged battery, as far away from the battery as possible.

— When removing the cables do it in reverse order as stated above. If you have difficulty in remembering this procedure, tape the instructions to the inside hood of your car for future reference. In any case, keep in mind that the last connecting step and the first disconnecting step is what causes the spark and this must be accomplished as far from the battery as possible.

Less Stringent Requirements Expected

Dr. David L. Winter, Director for Life Sciences, expects to require less demanding medical qualifications for scientists who will be performing research on the Space Shuttle than for the Shuttle astronaut pilots.

"The logical reason for different criteria is that mission safety rests very heavily on the pilots whose major responsibility will be flying the spacecraft. Scientists, however, will not have this same responsibility," Dr. Winter said.

Relaxation of the strict astronaut medical standards for scientists is also more feasible because forces of acceleration during launch and re-entry on Shuttle flights will only be three times the force of Earth's gravity, much less than forces experienced by astronauts in earlier flights.

Dr. Winter sees no barrier whatever to healthy women being among the scientists who will carry out investigations on Shuttle Space-lab missions. In centrifuge acceleration tests carried out with 12

women volunteers at the Ames Research Center in 1973, no physiological problems were identified.

Dr. Winter emphasized, "Our aim is to get the best qualified scientists we can into space and to bring them back safely. Right now it is impossible to predict what size, shape, sex or age these scientists will be. Therefore, our approach must be to broaden the medical criteria as widely as we safely can."



President's Views on EEO

Chairman Hampton of the Civil Service Commission recently reported to me on progress to assure equal opportunity in Federal employment. I have also reviewed the most recent statistics on the employment of minorities and women in the Federal Government.

Minorities and women have demonstrated their ability to compete successfully under merit principles. Over one-fifth of the jobs in Government agencies are held by Blacks, Spanish-speaking Americans, American Indians and Asian Americans. Nearly one-third of all Federal employees are women.

While I am encouraged by these figures, our efforts must continue. For example, within the general schedule and similar grade groupings, minorities represent only 5.2% and women only 4.5% of Federal employees at GS 13 and above. I therefore want you to know how I view equal employment opportunity...

Our Nation's strength is based upon the concept of equal opportunity for all our citizens. Decisions motivated by factors not related to the requirements of a job have no place in the employment system of any employer and particularly the Federal Government.

But, more is required than non-discrimination and prohibition of discriminatory practices. What is needed are strong affirmative actions to assure that all persons have an opportunity to compete on a fair and equal basis for employment and advancement in the Federal Government. Affirmative action includes recruitment activities designed to reach all segments of our society, fair selection procedures, and effective programs of upward mobility so that all employees have the opportunity to gain skills to enable them to compete for higher level positions. Such actions are under way in the Federal Government. They must be continued and expanded.

Although the Federal Government has employed large numbers of minorities and women, vigorous efforts to assure equal employment opportunity must continue, particularly in those geographical areas and agencies and installations where more progress is needed. There are program areas where special emphasis is needed. There is reason to believe, for example, that the skills of the Spanish-speaking as a group have not yet been fully tapped. Also, a much wider range of employment opportunities for women can be opened.

We cannot and must not permit persons to be locked into jobs not commensurate with their potential...

Moreover, men and women of all racial and ethnic backgrounds must be assured a fair opportunity to serve in positions where they can make a maximum contribution and participate in the decision-making process.

Equal employment opportunity doesn't just happen; it comes about because managers make it happen. I want equal opportunity to be reflected in every aspect of Federal employment. I have called on Chairman Hampton of the Civil Service Commission to keep me fully informed on an annual basis of the progress of each Federal department and agency is making in this regard...

Just as we will not condone preferences in employment decisions because of a person's race, ethnic origin or sex, we will not tolerate failure to vigorously carry out affirmative actions in support of equal employment opportunity...

Gerald R. Ford

MDP

(Continued from page 1)

Employees will be selected for participation on the basis of past and potential contributions as a JSC manager. Nominees — generally in the GS-13-GS-15 grade range — must be approved by the applicant's division chief and his director or program manager.

Thirty-eight employees have completed previous MDPs and 30 employees representing all directorates and program offices, are currently enrolled in the two ongoing programs.

Since the selection process involves screening by JSC and acceptance by the University of Houston, applications and supporting documentation must be submitted to the Chief, Employee Development Office (AH3) by May 15. Applications may be obtained from division offices or from the Employee Development Office.

For more information, contact Dutch Holland, Director of the MDP at 333-3420.



TOP TICKET SELLERS — Merchandise prizes have been given to top ticket sellers to the 1974 JSC Picnic. Receiving prizes were Ruby Laird (no. 1), Kathy Spencer (no. 2), and Gloria Martinez (no. 3). Pictured above, left to right are Rachel Windham, 1975 Ticket Chairman, Betty Cornett, 1974 Ticket Chairman, Ruby Laird, Kathy Spencer, Gloria Martinez, and Evon Collins, 1974 Picnic Chairman.

EAA Attractions

Table Tennis

The JSC Table Tennis Club is finalizing plans for a spring tournament which will be held May 10, 10:00 a.m. to 2:00 p.m. at the Gilruth Recreation Center. Open to EAA members only, the tournament will be around Robin Style with each player guaranteed at least four matches.

Entry fees are set at \$1.25 for EAA members with a further reduction of 75 cents for JSC Table Tennis Club members.

Trophies will be awarded to the first and second place winners. Sign up now, there are only 10 vacancies left. Contact Stephen Jacobs, X-3561 for more information.

Photo Club

The JSC Photo Club will sponsor a "portraiture lighting demonstration" on Thursday May 1, 7:30 p.m. at the Gilruth Recreation Center, Rm. 209.

This is just one of the many interesting programs conducted by the photo club which meets every first and third Thursday of the month.

The first Thursday is "Program Night" and the third Thursday features print and slide presentations. Bring your cameras and join the fun on May 1!

Ticket Corner

Tickets available in Building 11 Exchange Store. Houston Rockets, present EAA membership card at Hofheinz Pavillion Will-Call Window for \$1 off all price tickets; Houston Astros Baseball, \$3.15 reserve (reg. \$3.50), \$4 box (reg. \$4.50); Sea Arama, year around, adults \$3, children \$2 (reg. \$3.75 and \$2.75); Disney Magic Kingdom, free; Lion Country Safari Cards, free; Six Flags, coming soon; Dean Goss Dinner Theatre, \$16 couple (reg. \$20); Windmill Dinner Theatre, \$14 couple (reg. \$20), only 50 tickets available, will go on sale May 1, a zany comedy starring Joseph Cotton in "The Reluctant Debutante"; Houston Ballet — May 8, May 9, May 10, \$5.85 (reg. \$7); Astroworld, all tickets \$4.50 (reg. \$6.50-\$5.50); ABC Interstate Theatre, \$1.50.

Petrone

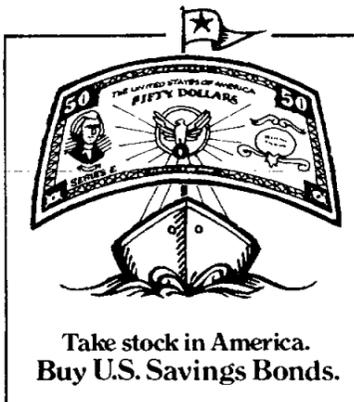
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be responsible to his environment — both in what he takes from it and what he returns to it. I look forward in my new position to seeing what I can do to meet this challenge."

Petrone added that his 15 years at NASA have given him "great satisfaction."

Prior to his appointment as Associate Administrator, Petrone was Director of the Marshall Space Flight Center. He has also served as Program Director of the NASA portion of the Apollo Soyuz Test Project. From September 1969 until he became MSFC Director, he served as Apollo Program Director. He served as Director of Launch Operations at the Kennedy Space Center from July 1966 until September 1969.

"We at NASA deeply regret seeing Rocco leave," stated NASA Administrator James C. Fletcher. "He has played a vital role in the space program from the development of the Redstone to the completion of Skylab. We wish him well in his new job."



Free Boat Exam

The U.S. Coast Guard Auxiliary will conduct a free examination of all boats on trailers in the south parking lot of JSC on May 3. The Coast Guard will check equipment which must meet federal requirements as well as other standards recommended by the Auxiliary. Decals will be presented to owners of boats passing inspection. Call 3594 for further information.



\$25 gift for \$18.75

Roundup Swap-Shop

Swap Shop advertising is available to JSC and on-site contractor personnel. Articles or services must be offered as advertised, without regard to race, religion, sex or national origin. Ads should be 20 words or less, including home telephone number. Name and office code must accompany, but need not be included in ad copy. Typed or printed copy must be received (AP3 Attn: Roundup) by Thursday of the week before publication.

MISCELLANEOUS

6-day Windjammer cruise ticket for two, choice of Bahamas, British Virgin Islands or West Indies, \$590 value for \$500, free lit and info, Goodman, 488-1458.

Sears Exercycle, li nw, \$25, 488-3112.

Deep Sea Fishing, snapper and/or King, everything furnished, 1-6 people, \$120 for reservations call 471-2263 aft 6 and wkends.

Golf Clubs, complete sets of woods and irons, nw Spaulding Executives \$300, li nw Wilson X-31's, \$200, 482-7643.

Wooden bed frame especially designed to fit around wheel well in pickup or van, very strong, \$18, 481-0095.

Little League Special, Pitch-Back practice frame, \$10, table tennis set on frame w/ rollers, \$25, 334-1869 aft 6 p.m.

Toro lawnmower, nds work or gd for spare parts, make ofr, McCreary, 946-5285 or 4202.

Spaulding Hallmark golf clubs, 8 irons, 4 woods, putter, bag, cart, little use, xInt cndn, \$160, 488-5077.

Home-sized shuffleboard, nw, \$300, asking \$250, li nw, Smith, 479-5096.

Royal typewriter w/ case, \$19.95, two saw horses, Bst ofr, Bullock, 6321 or 488-1042.

Electric guitar, fender stratocaster. 69 completely rewired, body refinished in maplewood, \$250, solid mayhaw, 333-3291 or 4286.

100 pound drum HT-H, nw, nvr opened, \$55, acid \$3.75 per case, 479-5152.

VEHICLES

Suzuki trailhopper 50, great cndn, helmet and racks, \$210, 334-2360.

Schwinn sting ray 20 bike, gd cndn, \$25, 334-2360.

73 Dodge Crew Cab Pickup for sale, cruise control, air, heat, pwr brakes, str, Smith, 479-5096.

For rent, two Cessna 150's and air conditioned Cherokee 140 at Spaceland Airpark, Laurentz or Fisher, 488-2537 or 331-3954.

71 Datsun 1200, 2-dr standard trans, am/fm radio, xInt cndn, 47 K. mi, 30 mpg, \$1450, 944-6788.

Fiberglass camper shell for LWB pick-up truck, gd cndn, \$175, Saulietis, 4217 or 488-5344.

71 Honda CL350, adult owner, \$475, McCreary, 946-5285 or 483-4202.

Ford p/u, 74, xInt cndn, a/c, power, 40 gal. capacity, 8-track tape, camper shell, \$4000, Camp, 534-6763.

74 Yamaha TX500, nw cndn, 4000 mi, 2 cyl-4 cycle, turn signals, elec. start, \$1250, White, 644-3585.

Mossberg 3-spnd bike, 20" new, nvr ridden, cost \$110, sell for \$75.

65 Chevy II Nova, 4-dr, air, auto, 2 nw tires, 190cc (6 cyl.) eng in xInt cndn, top nds paint, vry economical transportation for student, etc. Wade x5293.

70 Triumph Bonneville, 650 cc, mint cndn w/ only 6000 mi, orig adult owner, \$1195, 482-1549, Friendswood.

Motorcycle accessories and foul weather gear, Arthur Fulmer helmet, medium, foam insulated overalls, large, rain suit, medium, rubber boots, large, all for \$35, McCreary, 946-5285 or 4202.

Rent Cherokee 235 IFR trainer, 2 Nav-Comms, DME, ADF, Marker Beacon, autopilot/Nav-Tracker, \$28/hr wet, CFII available, 334-1869 aft 6 p.m.

71 Triumph motorcycle, 250cc, xInt cndn, \$325, Eubanks, 534-3651.

65 T-Bird, a/c, front disc brakes, \$500, Dave, 334-1378 or 4606.

67 Plymouth 4-dr, Fury II, mechanically o.k., nw brakes, gd tires, dent in one front fender, yellow, \$495, Michael 333-2468.

Must sell 69 Chevy Impala V-8, 2-dr, vinyl top, auto p/s, air, radio, \$725, Yeater, 946-2390.

72 Honda CB 350, xInt cndn, \$625 or bst ofr, Patin, 481-6548, or X5121.

71 Honda CL175, \$425, 69 Chev Impala, \$1000, 69 Ford Pickup, camper cover, \$1100, 488-3238.

71 Ford Country Squire, 10 passenger, air, am/fm, cruise control, radials, \$1450, 334-3202 aft 6.

HOUSEHOLD ARTICLES

8 ft custom built Shaw couch, green pattern w/ three loose cushions, bst ofr; green-gold-white cut velvet early American style ch, li nw, \$50, Goodman, 488-1458.

Two maple twin beds (no springs, mattresses) \$40 ea, or \$75 for both, Lattier, 488-1366.

4-drawer chest, early American style, maple finish, \$35, maple tea cart w/ drop leaves and drawer, \$30, 334-1869 aft 6 p.m.

PROPERTY AND RENTALS

Nice Rayburn Country lot, Section 16 for bal due, \$4,800, 440-3913 aft 5.

Nassau Bay, tired of driving? Closest home to JSC/Bldg 1, 4-2-2, Contemp, corner lot, great value, \$55,000, 333-4896, no agents.

LOST AND FOUND

Found, lt wt jacket in rm 206 Gilruth Rec. Center, on 3-20-75, call and identify, W. Bates, X6191.

BOATS

21 ft Vanguard fiberglass boat w/ tandem w/ tilt-bed trailer, 482-7947 aft 6.

WANTED

Weekend retreat property w/ or w/out living quarters, wooded, fresh water fishing, within 1 1/2 hours drive from Houston.

Wood desk not over 30 inches deep, also 3-drawer file cab, Briston, 485-2219.

Used refrigerators, 16 to 18 cu ft, gd working cndn, Presnell, 482-7786.

Trailer for 14 ft Jon boat, McPhillips, 333-3792.

2 keyboard elec organ w/ rhythm accompaniment, camping trailer approx 20 ft self-contained tandem whs, under \$2,000.

*Artists willing to paint signs for Little League, nd help badly, Chassay, 481-2940 or 2181.

VW engine (1961-1965) in reasonable cndn, 334-2180.

MORE SWAP-SHOP

Black and white tv portable on stand, \$35, 19", fold-up regulation portable ping pong table, 3/4" top, 339-1794 aft 5.

Choice 40 acres near Big Bend Park, \$5,000 aft 5, 339-1794.

21' 68 MFG Fiberglass Cabin, 160 Mercruiser I/O, loaded w/ extras, dual tank and batteries, depthfinder, etc, nds outdrive ovrrhaul, make ofr, 333-3519.

15' Monark Fiberglass bass boat, 50 hp Merc, 2 tanks/Batts, super motor guide, Lowrance, trailer, \$1595, Wegener, 488-4117.

Complete darkroom outfit, nvr used, at Far East PX price, \$117, moving to Japan, 333-4896.

Boys' 26" 5-spnd bike, xInt cndn, \$50, Shirley, 472-6317 aft 5.

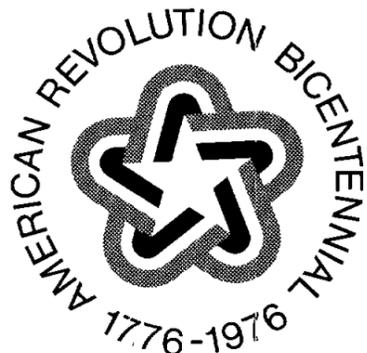
House for sale, Friendswood, custom built, 3-car garage, 1900 sq ft, brick floors, many xtras, acre lot, \$56,500, 482-7837.

Wanted: 70-72 VW or Toyota 1200 series, 4 spd, gd cndn, 946-1869 aft 6 p.m.

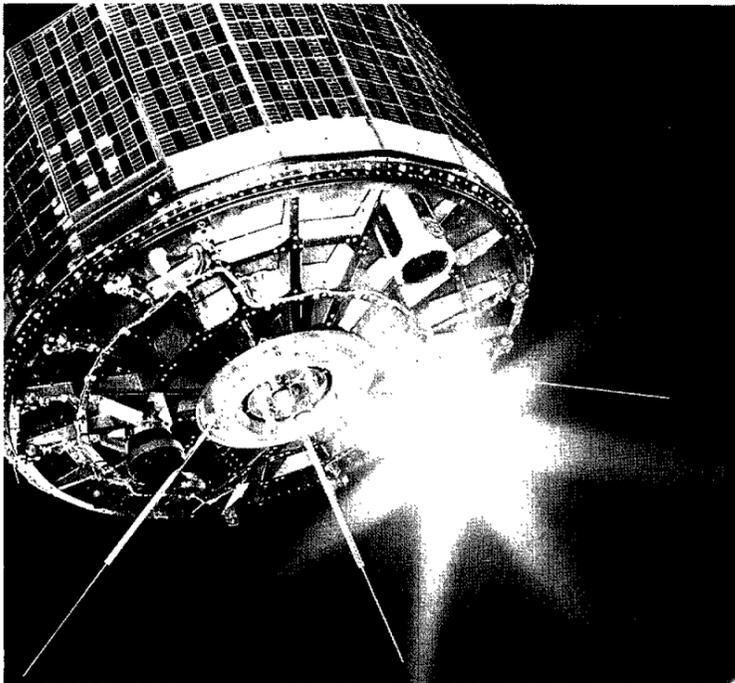
Table Tennis Set, complete, \$35, 946-1869 aft 6.



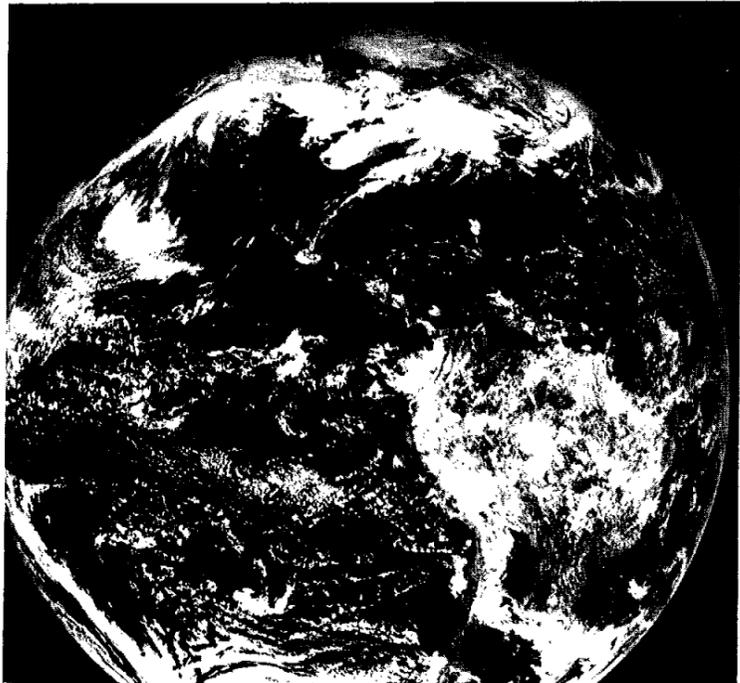
GATHERING DATA — Renee Johnston of the Propulsion and Power Division sits at the control board in the Propulsion Test Facility, Thermal Chemical Test area gathering data from the Reaction Control System (Vernier) engine. She is assigned to the Power Generation Branch here.



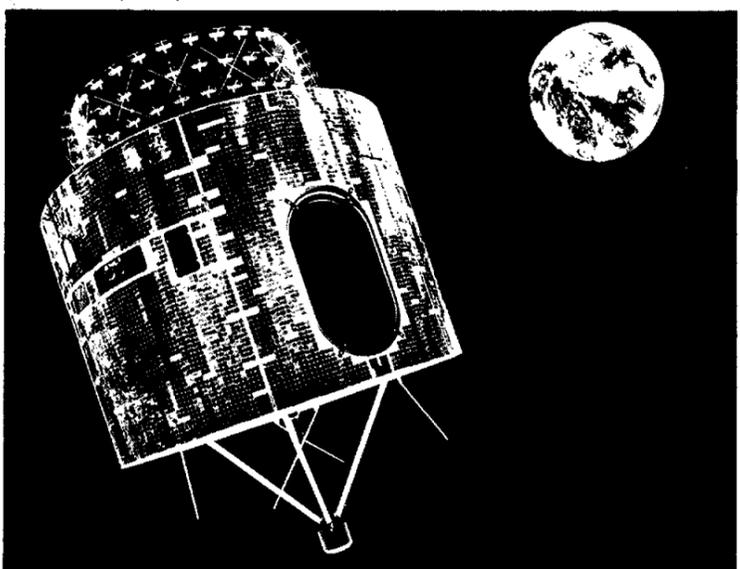
Weather Satellites Develop Rapidly Over Past 15 Years



TIROS — Television Infrared Observation Satellites, the first of which was launched 15 years ago from Cape Canaveral, Fla., were the first in a distinguished line of spacecraft which evolved into an operational system of major importance to our understanding of Earth's environment.



EARTH FROM SPACE — The Western Hemisphere shows clearly in this picture taken 22,300 miles above Earth early in February by NASA's Synchronous Meteorological Satellite-2 less than a week after its launch from Cape Canaveral, Fla. SMS-2 with its sister satellite carries day and night cameras capable of returning pictures every thirty minutes to U.S. weathermen.



SMS — Two Synchronous Meteorological Satellites now watch weather systems 24 hours a day with visible and infrared imaging devices — one over the Atlantic Ocean, the other over the Pacific. They quickly detect significant weather developments, particularly in oceanographic regions — rapid changes in storm intensity, speed and direction of movement and the emergence of new storm centers.

Fifteen years ago (April 1, 1960), NASA placed in orbit the first weather satellite, launching it by a Thor-Able rocket from Cape Canaveral, Fla.

Since then weather satellites have developed at such a furious pace that photos of Earth that thrilled the world in 1960, today are merely adjuncts to life.

Called **TIROS-1** (for **television Infrared Observation Satellite**), the first weather satellite was to become the ancestor of a long and distinguished line of spacecraft descendants. These evolved into an operational system of major importance to human knowledge of Earth's environment.

The latest addition to the weather satellite family is the Synchronous Meteorological Satellite (SMS) which looks down on Earth from its geostationary orbit to constantly watch weather systems. At present, two such NASA spacecraft watch weather systems 24 hours a day.

The advent of operating weather satellites signaled the beginning of a new era in worldwide weather coverage. The satellites have compiled a remarkable record, taking more

than 2.2 million pictures and logging 7.5 billion miles of space travel. Not a single major storm has gone undetected or untracked and SMS has greatly increased the ability to watch the spawning of potentially dangerous storms and their movement across oceans.

In the future, follow-on experimental and operational satellites will return global information on wind speed and direction, vertical

and surface temperatures and water vapor measurements, as well as other meteorological data important to an understanding of world weather.

Meteorologists believe that eventually satellites coupled with computers will enable us to give accurate long and short-term weather forecasts. Synchronous orbiting satellites are expected to provide warnings of catastrophic weather.

Throughout NASA *(Continued from page 1)*

nia. The new oceanographic geodesic satellite, designated Geodynamics Experimental Ocean Satellite-3 (GEOS-3) is the third in a series of spacecraft designed to gain knowledge of Earth's shape and dynamic behavior.

CATALOG

Land-use planners, environmentalists, conservationists, resource managers and educators now may call on a catalog of photographs taken from the Skylab space station 270 miles above the Earth to assist them in their studies of Earth's problems. An index of the 35,000 photographs taken in 1973-74 by the three Skylab crews with the Earth Resources Experiment Package (EREP) equipment is

TEST VEHICLES

Two subscale models of a highly maneuverable aircraft using advanced and experimental technology will be built for NASA's Flight Research Center, Edwards, CA.

The need for advanced maneuvering capability in future aircraft was identified in a joint Department of Defense/NASA study.

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Dr. MacQueen To Conduct Seminar

Dr. Robert M. MacQueen, Skylab Principal Investigator and Senior Scientific Staff Member, High Altitude Observatory, will conduct a seminar on "Solar Science from Skylab" on May 1, 1975. The seminar will be held in the Building 30 Auditorium from 3:00-4:30 p.m.

A native of Memphis, Tennessee, Dr. MacQueen is a lecturer in the Department of Astrophysics at the University of Colorado in Boulder and since 1970 has been Principal Investigator for the White Light

Coronagraph Experiment conducted during Skylab. During the seminar, he will discuss the initial results from each experiment, particularly as it relates to new knowledge which has emerged.

Dr. MacQueen has served as a member of the National Academy of Science Space Astronomy committee since 1972 and this year is serving as Vice-Chairman of the Solar Physics Division of the American Astronomical Society. He

received the NASA Exceptional Scientific Achievement Medal in 1974.

Countdown

(Continued from page 1)

The astronauts are prime crewmen Brig. Gen. Thomas P. Stafford, Vance D. Brand and Donald K. Slayton; backup crewmen Capt. Alan L. Bean, Capt. Ronald E. Evans and Lt. Col. Jack R. Lousma; support crewmen Lt. Col. Karol J. Bobko, Cdr. Robert L. Crippen, Lt. Col. Robert F. Overmyer and Cdr. Richard H. Truly; and Capt. Eugene A. Cernan, Special Assistant to the Apollo Spacecraft Program Manager.

First Aid

Would you know the proper treatment for a broken arm or a severe cut on the foot of your child or friend? If not enroll in the first aid course being taught by the American Red Cross at the Gilruth Recreation Center beginning May 20. Take advantage of this opportunity to prepare for first aid emergencies. Call 3594 for further information. These lessons will be free to persons interested.

Tennis Lessons

Beginner, intermediate, and advanced tennis lessons will start at the JSC courts June 2. The lessons will consist of one hour sessions twice per week for four weeks. All lessons will be \$30. Morning and evening hours are available. A playground is located next to the courts for those who have children. Call 3594 for more information.

ROUNDUP

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